

R-010-208.3

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**WASTE PIT AREA STORMWATER RUNOFF  
CONTROL REMOVAL ACTION -- RESPONSE TO  
REGULATOR COMMENTS**

**01-24-91**



Department of Energy  
Fernald Environmental Management Project  
P.O. Box 398705  
Cincinnati, Ohio 45239-8705  
(513) 738-6357

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JAN 24 1992

DOE-738-92

Mr. James A. Saric, Remedial Project Director  
U. S. Environmental Protection Agency  
Region V - 5HR-12  
230 South Dearborn Street  
Chicago, Illinois 60604

Mr. Graham E. Mitchell, DOE Coordinator  
Ohio Environmental Protection Agency  
40 South Main Street  
Dayton, Ohio 45402-2086

Dear Mr. Saric and Mr. Mitchell:

**WASTE PIT AREA STORMWATER RUNOFF CONTROL REMOVAL ACTION -- RESPONSE TO  
REGULATOR COMMENTS**

- References:     1) Letter, J. A. Saric to J. R. Craig, "U.S. EPA Comments on the Waste Pit Area Runoff Control Removal Action Project - Work Plan Modifications," dated December 24, 1991
- 2) Letter, G. E. Mitchell to J. R. Craig, "Waste Pit Area Stormwater Removal Action - W. P. Modifications," dated November 15, 1991

The above referenced letters provided United States (U.S. EPA) and Ohio Environmental Protection Agency (Ohio EPA) comments to proposed modifications to the subject work plan. The purpose of this correspondence is to provide the U.S. EPA and Ohio EPA with responses and proposed resolutions to these comments, and to request approval of the subject work plan modifications. Enclosures 1 and 2 to this correspondence provide responses and resolutions to comments made by the U.S. EPA and Ohio EPA, respectively.

Included with this correspondence as Enclosure 3 is the work plan for the subject Removal Action project. This work plan is referenced in Enclosures 1 and 2, and has been modified to reflect proposed modifications in response to U.S. EPA and Ohio EPA comments. A Sampling and Analysis Plan, also modified to reflect proposed modifications, has been included with this correspondence as Enclosure A to the revised work plan. All other enclosures referenced in the work plan remain unchanged and have not been included with this correspondence. The enclosed revised Work Plan, and Sampling and Analysis

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Plan replace previously issued Work Plans, and Sampling and Analysis Plans in their entirety, except previously specified enclosures.

Please note, page 3 of 5 of Enclosure A, Sampling and Analysis Plan, indicates that soils recognized as solid wastes shall be temporarily stored while awaiting further action under the Improved Storage of Soil and Debris Removal Action 17.

The Department of Energy (DOE) is continuing to proceed with the subject Removal Action project in a manner consistent with the revised work plan.

If you or your staff have any questions, please contact Oba Vincent at FTS 774-6937 or (513) 738-6937.

Sincerely,



Jack R. Craig  
Fernald Remedial Action  
Project Manager

FO:Vincent

Enclosures: As Stated

cc w/encs.:

J. J. Fiore, EM-42, TREV  
K. A. Hayes, EM-424, TREV  
J. Benetti, USEPA-V, SAR-26  
M. Butler, USEPA-V, 5CS-TUB-3  
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S. W. Coyle, WEMCO  
J. P. Hopper, WEMCO  
J. D. Wood, ASI/IT  
J. E. Razor, ASI/IT

AR Coordinator, WEMCO

January 21, 1992

## RESPONSE TO COMMENTS

from

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASTE PIT AREA STORMWATER RUNOFF CONTROL REMOVAL ACTIONCOMMENT 1:

DOE should present the full analytical results of the 44 samples collected during the previously conducted field activities. These must be reviewed by EPA prior to approving a work plan based on the conclusions drawn from them.

RESPONSE

Agreed.

RESOLUTION

Appendix A to this document is the analytical data from the forty-four (44) samples collected from the vicinity of the removal action.

COMMENT 2:

Page 3 of 5 in the SAP states that stockpiled soils will be sampled in a manner consistent with the RI/FS quality assurance project plan (QAPP) and as supplemented by Part III of SW-846. Specific information of how Part III of SW-846 will be implemented should be provided. The size of the stockpile to be sampled and the number of samples to be collected should also be provided. In addition, the average concentration should not be used to determine the disposition of the stock piled soils. Statistical methods in SW-846 should be used to determine if sufficient samples have been collected to accurately characterize the stockpiles.

RESPONSE

Two (2) soil piles have been generated by this removal action and measure approximately 25' x 35' and 90' x 100'. The number of samples, sample locations and sample depths have been determined using methods outlined in USEPA guidance document 230\02-89-042, "Methods for Evaluating the Attainment of Clean-up Standards, Volume 1, Soils and Solid Media," dated February 1989. Sixteen (16) sample points were selected at the 90' x 100' stockpile and

fourteen (14) sample points were selected at the 25' x 35' stockpile. Specific sample location points and sample depths were chosen by computer random generator.

Sample analytical results will be analyzed using Student's 'T' test with an 80% confidence level.

RESOLUTION

See Attachment A to Attachment 3, "Sampling and Analysis Plan," Page 2 of 5, "Excess Soil Sampling and Disposition."

COMMENT 3:

Page 3 of 5 in the SAP states that stockpiled soils exhibiting concentrations of depleted uranium less than 100 pCi/g and natural thorium less than 50 pCi/g will be returned to an uncontrolled state within the FEMP Controlled Area. This seems to be inconsistent with the interim cleanup levels presented in the SAP on page 4 of 5 as 35 pCi/g and 10 pCi/g for depleted uranium and natural thorium respectively. The stockpiled soils above these interim cleanup levels should be handled in such a manner that is consistent with the final remedial actions.

RESPONSE

The first "bullet" on page 3 of 5 of the Sampling and Analysis plan shall be modified to state that soil exhibiting concentrations of depleted uranium less than 35 pCi/g and natural thorium less than 10 pCi/g shall be returned to an uncontrolled state and made available for unrestricted use within the FEMP Controlled Area.

A fourth "bullet" shall be added which states that soils exhibiting concentrations of depleted uranium between 35 and 100 pCi/g or natural thorium between 10 and 50 pCi/g, but neither uranium nor thorium exceeding 100 pCi/g and 50 pCi/g, respectively, shall be incorporated into the Improved Storage of Soil and Debris Removal Action #17.

RESOLUTION

See Attachment A to Attachment 3, Sampling and Analysis Plan, Page 3 of 5.

COMMENT 4:

Page 4 of 5 of the SAP states that 12 additional inches of soil will continue to be removed until the average total uranium and thorium concentrations exhibited by the soil samples are less than the DOE [NRC] Branch Technical Paper. The SAP should clearly state which samples are being averaged and the number of samples used in this calculation.

RESPONSE

The portion of the Sampling and Analysis Plan which describes the sampling procedures for the base of the sump excavation shall be modified to improve clarity.

RESOLUTION

See Attachment A to Attachment 3, Sampling and Analysis Plan, "Construction Related Sampling," Page 3 of 5.

**APPENDIX A**

WASTE PIT RUNOFF CONTROL REMOVAL ACTION  
SAMPLING RESULTS (ug/lQ)Q

VOLATILE ORGANICS	EPA SAMPLE NO.																							
	61007	61014	61021	61028	61035	61042	61049	61056	61070	61084	61091	61098	61105	61112	61119	61121	61133	61140	61147	61150	61161	61168	61175	61182
CHLOROMETHANE	12	11	11	12	13	12	12	11	12	13	11	12	13	11	12	11	11	11	11	11	12	12	12	12
BROMOMETHANE	12	11	11	12	13	12	12	11	12	13	11	12	13	11	12	11	11	11	11	11	12	12	12	12
VINYL CHLORIDE	12	11	11	12	13	12	12	11	12	13	11	12	13	11	12	11	11	11	11	11	12	12	12	12
CHLOROETHANE	12	11	11	12	13	12	12	11	12	13	11	12	13	11	12	11	11	11	11	11	12	12	12	12
METHYLENE CHLORIDE	2	5	8	11	3	12	24	51	38	17	8	11	13	8	9	25	20	10	9	12	16	14	11	19
ACETONE	8	7	5	12	13	12	29	26	48	8	9	19	20	15	14	15	4	70	15	12	12	3	12	13
CARBON DISULFIDE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	5	8	8	5	8	8	6	6
1,1-DICHLOROETHANE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	5	8	8	5	8	6	6
1,1-DICHLOROETHENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	5	8	8	5	8	6	6	6
1,2-DICHLOROETHANE (TOTAL)	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	5	8	8	5	8	6	6	6
CHLOROFORM	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
trans-1,2-DICHLOROETHENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
2-BUTANONE	3	11	11	12	13	12	4	2	5	3	11	12	13	11	12	11	11	8	11	2	12	12	12	12
1,1,1-TRICHLOROETHANE	2	6	6	8	8	8	6	8	8	8	6	8	8	6	8	5	8	8	6	5	8	6	8	6
CARBON TETRACHLORIDE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
VINYL ACETONE	12	11	11	12	13	12	12	11	12	13	11	12	13	11	12	11	11	11	11	12	12	12	12	12
BROMODICHLOROMETHANE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
1,2-DICHLOROPROPANE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
trans-1,3-DICHLOROPROPENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
TRICHLOROETHENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
DIBROMOCHLOROMETHANE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
1,1,2-TRICHLOROETHENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
BENZENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
cis-1,3-DICHLOROPROPENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
BROMOFORM	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
4-METHYL-2-PENTANONE	12	11	11	12	13	12	12	11	12	13	11	12	13	11	12	11	11	11	11	12	12	12	12	12
2-HEXANONE	1	11	11	12	13	12	2	2	12	13	1	12	13	2	4	11	11	5	11	11	12	12	12	12
TETRACHLOROETHENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	8	8	5	8	8	6	6
1,1,2,2-TETRACHLOROETHANE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	8	8	5	8	8	6	6
TOULEUENE	2	8	8	8	1	6	6	6	6	6	6	1	1	0	0	5	6	6	1	5	6	6	6	6
CHLOROBENZENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	8	8	5	8	8	6	6
ETHYLBENZENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	8	8	5	8	8	6	6
STYRENE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	8	8	5	8	8	6	6
TOTAL XYLEMES	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	8	8	5	8	8	6	6

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## WASTE PIT RUNOFF CONTROL REMOVAL ACTION

## SAMPLING RESULTS (µg/g)QC

VOLATILE ORGANICS	EPA SAMPLE NO.															AVERAGE	STD DEVIATION			
	61189	61190	61203	61210	61217	61225	61231	61238	61245	61252	61258	61260	61273	61280	61287	61294	61301	61308		
CHLOROMETHANE	12	12	12	12	11	12	11	12	11	12	11	11	12	12	12	12	11	11	11.65	0.61
BROMOMETHANE	12	12	12	12	11	12	11	12	11	12	11	11	12	12	12	12	11	11	11.65	0.61
VINYL CHLORIDE	12	12	12	12	11	12	11	12	11	12	11	11	12	12	12	12	11	11	11.65	0.61
CHLOROETHANE	12	12	12	12	11	12	11	12	11	12	11	11	12	12	12	12	11	11	11.65	0.61
METHYLENE CHLORIDE	31	11	11	10	22	20	22	46	7	15	15	15	40	23	31	27	44	11	18.05	11.61
ACETONE	40	15	69	18	47	6	20	13	16	4	11	5	15	12	13	15	11	8	17.95	16.90
CARBON DISULFIDE	6	6	6	6	6	6	6	6	6	6	5	6	1	6	6	6	6	6	5.79	0.79
1,1-DICHLOROETHANE	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.91	0.29
1,1-DICHLOROETHENE	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.91	0.29
1,2-DICHLOROETHANE (TOTAL)	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.91	0.29
CHLOROFORM	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.91	0.29
trans-1,2-DICHLOROETHENE	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.91	0.29
2-BUTANONE	12	2	11	12	11	12	2	12	2	12	2	11	12	12	12	12	11	11	9.40	3.84
1,1,1-TRICHLOROETHANE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	6.81	0.66
CARBON TETRACHLORIDE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
VINYL ACETONE	12	12	12	12	11	12	11	12	11	12	11	12	12	12	12	11	11	11	11.65	0.61
BROMODICHLOROMETHANE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
1,2-DICHLOROPROPANE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
trans-1,3-DICHLOROPROPENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
TRICHLOROETHENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
DISPROMOCHLOROMETHANE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
1,1,2-TRICHLOROETHENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
BENZENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
cis-1,3-DICHLOROPROPENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
BROMOFORM	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
4-METHYL-2-PENTANONE	12	6	2	12	11	3	2	12	11	12	11	12	12	12	12	1	4	9.84	3.51	
2-HEXANONE	12	12	6	12	11	12	3	12	11	12	11	11	1	1	12	12	1	11	9.12	4.29
TETRACHLOROETHENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
1,1,2,2-TETRACHLOROETHANE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
TOULEUENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.35	1.54
CHLOROBENZENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
ETHYLBENZENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
STYRENE	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29
TOTAL XYLEMES	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	5	5.91	0.29

## **WASTE PIT RUNOFF CONTROL REMOVAL ACTION**

Page 1 of

SEMI-VOLATILE ORGANICS	EPA SAMPLE NO.										SAMPLING RESULTS (µg/kg)Q													
	61007	61014	61021	61028	61035	61042	61049	61056	61070	61077	61084	61091	61098	61105	61112	61119	61126	61133	61140	61147	61158	61161	61168	61
PHENOL	45	380	380	130	440	73	400	62	390	120	110	380	410	420	390	390	1800	380	390	370	230	420	390	4
bis-(2-CHLOROETHYL) ETHER	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2-CHLOROPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
1,3-DICHLOROBENZENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
1,4-DICHLOROBENZENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
BENZYL ALCOHOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
1,2-DICHLOROBENZENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2-METHYLPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
bis-(2-CHLOROISOPROPYL) ETHER	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
4-METHYLPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
N-NITROSO-DN-N-PHOXYLAMINE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
HEXACHLOROETHANE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
NITROBENZENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
ISOPHORONE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2-NITROPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,4-DIMETHYLPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
BENZOIC ACID	1900	1900	1900	45	2100	2000	1900	73	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000
bis-(2-CHLOROETHOXY) METHANE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,4-DICHLOROPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
1,2,4-TRICHLOROPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
NAPHTHALENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
4-CHLOROANILINE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
HEXAChLOROBUTADIENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
4-CHLORO-3-METHYLPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2-METHYLANAPHTHALENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
HEXAChLOROCYCLOPENTADIENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,4,6-TRICHLOROPHENOL	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,4,5-TRICHLOROPHENOL	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
2-CHLORONAPHTHALENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2-NITROANILINE	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
DIMENTHLPHTHALATE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
ACENAPHTHYLENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,6-DINITROTOLUENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
3-NITROANILINE	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
ACENAPHTHENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,4-DINITROPHENOL	1900	1900	1900	1900	2100	2000	1900	1900	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
4-NITROPHENOL	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
DIBENZOFURAN	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
2,4-DINITROTOLUENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
DIETHYLPHthalate	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
4-CHLOROPHENYL-PHENYLETHER	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
FLUORENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4
4-NITROFLUORENE	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
4,6-DINITRO-2-METHYLPHENOL	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1900	2000	2000	1900	1900	1900	1900	1900	1900	1900	1900	2000	
N-NITRODIPhenylamine	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	360	420	390	4

## WASTE PIT RUNOFF CONTROL REMOVAL ACTION

SEMI-VOLATILE ORGANICS	EPA SAMPLE NO.											SAMPLING RESULTS (ug/kg)Q												
	61007	61014	61021	61028	61035	61042	61049	61056	61070	61077	61084	61091	61098	61105	61112	61119	61126	61133	61140	61147	61154	61161	61168	61175
4-BROMOPHENYL-PHENYLETHER	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	380	420	380	410
HEXACHLOROBENZENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	380	420	380	410
PENTACHLOROPHENOL	1900	1900	1900	1900	2100	2000	1900	1800	1900	1900	2100	1800	2000	2000	1900	1900	8700	1900	1900	1800	1800	2000	1900	2000
PHENANTHRENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	2600	380	390	370	380	420	380	410
ANTHRACENE	400	380	310	400	440	400	400	380	390	390	430	380	410	420	390	390	780	380	390	370	380	420	380	410
DI-N-BUTYLPHTHALATE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	190	380	390	370	380	420	380	410
FLUORANTHENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	6700	79	40	370	380	420	380	410
PYRENE	400	380	380	41	440	400	400	380	390	390	430	380	410	420	390	390	8200	92	45	370	380	420	380	410
BUTYLBENZYLPHthalATE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	380	420	380	410
3,3-DICHLOROBENZIDINE	700	760	780	790	870	810	800	760	780	850	760	810	840	770	780	3800	780	770	750	720	830	770	810	
BENZO (a) ANTHRACENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	4700	62	390	370	380	420	380	410
CHRYSENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	3500	62	390	370	380	420	380	410
bi(2-ETHYLHEXYL) PHALATE	400	380	380	600	55	200	1100	380	1000	1100	64	1300	410	100	390	390	1800	75	390	370	1800	79	62	770
DI-N-OCTYL PHTHALATE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	390	380	390	370	380	420	380	410
BENZO (b) FLUORANTHENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	9700	150	390	370	380	420	380	410
BENZO (b) FLUORANTHENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	1800	380	390	370	380	420	380	410
BENZO (a) PYRENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	5200	380	390	370	380	420	380	410
INDENO (1,2,3- <i>cd</i> ) PHRENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	4200	380	390	370	380	420	380	410
DIBENZ (a,h) ANTHACENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	900	380	390	370	380	420	380	410
BENZO (g,h,i) PERYLENE	400	380	380	400	440	400	400	380	390	390	430	380	410	420	390	390	5300	380	390	370	380	420	380	410

**WASTE PIT RUNOFF CONTROL REMOVAL ACTION**  
**SAMPLING RESULTS (µg/kg)Q**

SEMI-VOLATILE ORGANICS	EPA SAMPLE NO.															AVERAGE	STD DEVIATION				
	61182	61189	61196	61203	61210	61217	61225	61231	61238	61245	61252	61258	61265	61273	61280	61287	61294	61301	61308		
PHENOL	410	420	410	390	400	390	120	370	410	390	83	370	77	42	400	380	400	370	49	343.28	264.02
Bi-(2-CHLOROETHYL) ETHER	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2-CHLOROPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	44	400	380	400	370	370	419.40	220.20
1,3-DICHLOROBENZENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
1,4-DICHLOROBENZENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
BENZYL ALCOHOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
1,2-DICHLOROBENZENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2-METHYLPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
Bi-(2-CHLOROISOPROPYL) ETHER	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
4-METHYLPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
N-NITROSO-O1-N-PHOPYLAMINE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
HEXAACHLOROETHANE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
NITROBENZENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
ISOPHORONE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2-NITROPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2,4-DIMETHYLPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
BENZOIC ACID	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	2000	1800	1900	2000	1900	1900	1800	1800	1800	1955.28	1146.65
Bi-(2-CHLOROETHOX) METHANE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2,4-DICHLOROPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
1,2,4-TRICHLOROPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
NAPHTHALENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
4-CHLOROANILINE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
HEXAACHLOROBUTADIENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
4-CHLORO-3-METHYLPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2-METHYLANAPHTHALENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
HEXACHLOROCYCLOPENTADIENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2,4,6-TRICHLOROPHENOL	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2,4,5-TRICHLOROPHENOL	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	2000	1800	1900	2000	1900	1900	1800	1800	1800	2079.07	1024.48
2-CHLORONAPHTHALENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2-NITROANILINE	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	1900	2000	1900	1900	1800	1800	1800	1800	1800	2079.07	1024.48
DIMENTHYLPHthalate	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
ACENAPHTHYLENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	416.28	137.52
2,6-DINITROToluene	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
3-NITROANILINE	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	1800	1900	2000	1900	1900	1800	1800	1800	1800	2079.07	1024.48
ACENAPHTHENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2,4-DINITROPHENOL	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	2000	1800	1900	2000	1900	1900	1800	1800	1800	2079.07	1024.48
4-NITROPHENOL	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	2000	1800	1900	2000	1900	1900	1800	1800	1800	2033.30	1063.12
DIBENZOFURAN	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
2,4-DINITROTOLUENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
DIETHYLPHthalate	59	420	410	390	400	390	420	680	410	390	410	370	380	410	400	380	400	370	370	428.95	222.93
4-CHLOROPHENYL-PHENYLETHER	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
FLUORENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47
4-NITROANILINE	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	2000	1800	1900	2000	1900	1900	1800	1800	1800	2079.07	1024.48
4,6-DINITRO-2-METHYLPHENOL	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	2000	1800	1900	2000	1900	1900	1800	1800	1800	2079.07	1024.48
N-NITROSODIPHENYLAMINE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.91	212.47

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## WASTE PIT RUNOFF CONTROL REMOVAL ACTION

SAMPLING RESULTS (ug/kg)Q

SEMI-VOLATILE ORGANICS	EPA SAMPLE NO.														AVERAGE	STD DEVIATION					
	61182	61189	61196	61203	61210	61217	61225	61231	61238	61245	61252	61258	61265	61273	61280	61287	61294	61301	61308		
4-BROMOPHENYL-PHENYLETHER	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.01	212.47
HEXACHLOROBENZENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.01	212.47
PENTACHLOROPHENOL	2000	2000	2000	1900	1900	2000	1800	2000	1900	2000	1800	1900	2000	1900	1900	1800	1800	1800	2079.07	1024.48	
PHENANTHRENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	445.51	332.77
ANTHRACENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	404.19	60.66
DI-N-BUTYLPHALATE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	390.47	35.70
FLUORANTHENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	520.18	957.31
PYRENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	547.88	1184.55
BUTYLBENZYLPHthalate	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.01	212.47
3,3-DICHLOROBENZIDINE	810	830	830	780	800	780	830	740	810	780	810	730	770	820	800	770	790	730	740	852.79	428.22
BENZO (a) ANTHRACENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	481.40	654.58
CHRYSENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	453.26	475.28
bio(2-ETHYLHEXYL) PHALATE	62	110	410	78	400	390	970	370	410	390	3800	370	52	1600	82	770	3500	370	370	643.70	779.89
DI-N-OCTYL PHthalate	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	427.01	212.47
BENZO (b) FLUORANTHENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	598.81	1405.83
BENZO (b) FLUORANTHENE	410	420	410	390	400	390	420	370	410	390	410	370	48	410	400	380	400	370	370	420.14	220.05
BENZO (a) PYRENE	410	420	410	390	400	390	420	370	410	390	410	370	42	410	400	380	400	370	370	499.12	727.53
INDENO (1,2,3-cd) PHRENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	483.72	573.71
DIBENZ (a,h) ANTHACENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	406.68	78.13
BENZO (g,h,i) PERYLENE	410	420	410	390	400	390	420	370	410	390	410	370	380	410	400	380	400	370	370	509.39	739.44

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## WASTE PIT RUNOFF CONTROL REMOVAL ACTION

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INORGANIC COMPOUND	EPA SAMPLE NO.																									
	SAMPLING RESULTS (mg/kg) <sup>a</sup>																									
	61002	61009	61016	61023	61030	61037	61044	61050	61058	61065	61072	61079	61093	61100	61107	61114	61121	61128	61135	61142	61150	61158	61163	61170	61177	61184
ALUMINUM	8200	2600	4320	7470	9410	2580	5300	7100	5800	2880	5330	4170	11700	10900	13500	5340	6910	4690	9980	7450	6460	9520	10000	7950	8480	8680
ANTIMONY	28.4	22.6	30.8	27.8	21.3	22.7	29.6	19.6	28	25.1	20.3	22.6	25.6	29.7	32.8	28.3	28.3	25.7	29.8	32.9	22.6	31.3	28.6	15.9	30.2	18.3
ARSENIC	5.7	4.1	4.7	6.4	4.2	4.2	4.5	3.9	3.9	2.8	3.5	3.8	5.3	9.5	10.5	5.4	3.6	5.5	9	5.7	6.8	5.4	2.7	6.4	7.8	6.2
BARIUM	49.2	31.4	42.6	52.5	64.7	27.2	49.9	52.9	51.9	22.5	48.2	34	92.3	113	123	47.9	52.6	44.7	74.4	49.5	49.8	80.3	67.3	84.8	47.7	60.5
BERYLLIUM	0.73	0.62	0.67	0.75	0.69	0.58	0.78	0.63	0.72	0.63	0.62	0.65	0.79	0.7	0.97	0.64	0.88	0.7	0.88	0.74	0.67	0.93	1	0.61	0.89	0.71
CADMUM	5.8	5	7.7	5.7	3.4	4.6	5.9	3.3	5.7	5.5	4	5.3	3.2	4.0	4.7	5.6	5.6	5.3	4.9	6.2	5.8	6.1	4.7	2.5	6.7	2.7
CALCIUM	64300	137000	124000	99100	26400	143000	155000	35000	101000	152000	73900	130000	21000	23300	41800	85300	108000	123000	68600	87200	73700	100000	131000	11000	80900	17500
CHROMIUM	19.8	7.8	11.3	16.3	17	6.1	7.4	14.4	14.4	5.9	13.3	8.8	18.8	22.8	24.5	14.9	13	10.2	19.4	17.9	14.5	18.6	15.8	13	18.4	14.2
COBALT	11.8	6.6	9.6	10.9	11.1	7	9	8.2	10.6	7.3	8.5	7.4	17	14.8	15.7	9.4	8.7	7.8	11.3	10.5	8.7	12.8	12.4	9	13	9.7
COPPER	19.9	12.1	15.7	18.3	14.6	11.4	18.5	14.5	14.8	13.3	13.8	15.4	17.8	23.5	25.9	17.4	16.2	19	19.2	20.5	17.8	21.7	20.2	15.4	23.8	15.7
IRON	21300	6670	13200	17800	18900	7180	13100	14900	14000	8200	15700	9610	23800	26300	27800	13500	13300	11100	18100	17200	16200	19800	20400	17000	25200	18100
LEAD	8.8	34.3	7.8	10.5	12.1	8.4	13.5	12.1	7.9	6.8	7.8	12	12.6	10.8	16.5	8	18.6	8.7	18.6	10.6	12	10.2	6.7	15.2	14.4	15
MAGNESIUM	22700	21200	38900	21900	8650	10900	25800	12000	24800	25000	12500	24300	6370	14400	13700	24200	26800	23600	18000	25100	25000	26000	15400	6930	28300	6340
MANGANESE	413	423	317	438	655	426	638	512	558	445	707	391	759	1130	841	391	471	372	526	478	457	529	498	609	490	478
MERCURY	0.12	0.11	0.11	0.12	0.12	0.11	0.11	0.13	0.12	0.11	0.11	0.11	0.13	0.12	0.11	0.1	0.11	0.12	0.11	0.12	0.11	0.12	0.11	0.12	0.12	
MOLYBDENUM	4.7	3.7	5.7	4.6	3	3.9	4.1	2.5	4.4	3.9	3.3	4.1	4.7	4.8	4.6	4.1	4.6	4.3	4.6	4.4	3.6	3	5.7	3.1		
NICKEL	41.3	24.8	26.4	27.8	27.9	18.7	26.8	20.3	31.9	19.7	20.8	22.4	23.1	38.9	38.5	25.1	22.8	23.1	26.6	31.3	26.8	35	30	22.1	35.1	21.8
POTASSIUM	1070	434	880	1210	1060	448	849	1120	951	688	682	797	1430	1300	674	767	786	988	1010	630	1100	949	994	1030	724	
SELENIUM	0.49	0.44	0.44	0.5	0.5	0.45	0.54	0.5	0.48	0.45	0.45	0.45	0.5	0.5	0.44	0.43	0.44	0.49	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
SILVER	10.4	7.8	9.4	10.3	7.2	7.6	6.7	7.3	10.3	6.7	9.4	7.6	6.8	6.6	8.7	6.2	8	7.7	9.7	9.7	9	9.7	8.4	3.8	10.1	4.9
SODIUM	88	137	134	109	92.5	135	165	83.6	161	140	140	54.6	119	108	111	145	145	99.2	107	125	122	97.9	43.8	114	60.5	
THALLIUM	0.49	0.44	0.44	0.68	0.5	0.45	0.48	0.5	0.48	0.45	0.45	0.45	0.5	0.5	0.44	0.43	0.44	0.51	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
VANADIUM	23.8	11.2	16.4	22.2	23.8	10.9	15.4	18.9	18.9	11.8	18	13.9	26.9	27.7	33	18.1	18.2	15.9	25	24.6	20.6	22.9	24	19.1	24.6	21.2
ZINC	49.6	21.9	35.3	42.5	46.7	28.9	32.2	38.6	40.9	23.6	27.7	59.2	47.8	65.2	64.6	37.9	32.9	34.8	47.4	47.6	37.4	51	45.4	45.7	56	59.4
CYANIDE	0.12	0.11	0.11	0.12	0.13	0.11	0.11	0.13	0.12	0.11	0.11	0.12	0.12	0.11	0.12	0.11	0.11	0.12	0.12	0.12	0.12	0.11	0.12	0.11	0.12	

## WASTE PIT RUNOFF CONTROL REMOVAL ACTION

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INORGANIC COMPOUND	EPA SAMPLE NO.														AVERAGE	STD DEVIATION				
	61086	61191	61198	61205	61212	61219	61220	61233	61240	61246	61254	61260	61268	61275	61282	61289	61295	61302		
ALUMINUM	5240	7500	10000	10400	12900	4010	7100	7120	8110	10100	8770	5410	5130	8240	12500	7680	8820	9170	7588.88	2691.56
ANTIMONY	32.6	12.9	25	30.1	26.3	34.1	12.8	21.7	30.2	18.2	20.6	26.4	22	28.2	23.3	22.1	25.2	26.4	25.38	6.12
ARSENIC	4.3	3.7	7.3	8.3	8.8	9.1	6.2	32.5	5.1	5.2	9	4.6	4.9	7	6.8	3.8	5.8	5.4	6.33	4.42
BARIUM	37.6	49.0	78.0	84.4	97.9	55.1	58.0	58.1	63.4	79.1	75.2	58.3	40.6	65.4	90.2	58.1	73.8	70.3	61.70	21.59
BERYLLIUM	0.73	0.54	0.9	0.82	0.89	2.3	0.53	0.65	0.74	0.75	0.7	1	0.81	0.81	0.71	0.8	0.85	0.78	0.26	
CADMIUM	7.5	1.7	3.1	4.9	3.1	6.0	2.3	3.3	5.3	3.4	3.7	6.6	6	5.4	2.8	3.2	4.3	5.5	4.75	1.43
CALCIUM	123000	4880	49700	42700	13500	177000	19700	38000	66800	24700	33100	104000	79000	87800	15300	28800	59800	74800	74206.38	45772.75
CHROMIUM	11.9	10.5	18.5	21.6	19.9	30.3	13.2	15.8	17	17.1	16.7	12.4	13.7	15.8	18.3	15.3	17.9	19.2	15.55	4.78
COBALT	8	8.1	11.4	13.2	11.9	11.4	8.8	9.1	10.1	8.9	10	6.5	7.5	10.9	11.1	9.3	9.9	11.5	10.17	2.30
COPPER	19.7	10.0	18.1	21.5	21.2	29.3	13.2	14.8	17.5	14.8	18.2	15.7	16.0	26.0	15.3	17.8	20.1	22.6	17.99	3.99
IRON	12800	18100	19500	23100	25300	9380	16300	12900	15200	19300	19200	7160	11500	17100	22500	14300	17800	22900	18602.27	5252.95
LEAD	7.9	14.6	18.8	20.7	14.3	81.4	20	29.7	8.8	14.7	17	20.4	17.2	0.47	17.7	15.1	21.8	19.8	15.39	11.72
MAGNESIUM	39000	3050	8910	15700	5210	31800	5710	10500	20500	9220	10800	32900	20800	22200	6440	10800	14800	20700	18327.95	9035.14
MANGANESE	329	367	774	602	571	489	526	485	530	473	522	694	380	475	539	348	519	543	524.41	149.76
MERCURY	0.11	0.13	0.12	0.14	0.12	0.1	0.12	0.11	0.11	0.12	0.11	0.12	0.12	0.12	0.11	0.12	0.13	0.12	0.01	
MOLYBDENUM	4.7	2.7	3.8	4.4	5.2	11.4	2.4	4	2.7	3.2	4.4	4.5	4	2.3	2.5	3.6	4.8	4.15	1.43	
NICKEL	26.7	15	21.1	31.6	27.3	30	16.3	19.5	27.6	22.0	23.2	50.2	20.6	28.4	26.9	23.1	23.9	34.5	26.79	6.83
POTASSIUM	813	477	945	1030	984	485	728	742	752	888	1060	763	848	1110	1050	942	1120	1020	882.27	225.10
SELENIUM	0.44	0.53	0.51	0.56	0.47	0.48	0.46	0.45	0.44	0.48	0.54	0.62	0.48	0.47	0.46	0.49	0.49	0.5	0.48	0.04
SILVER	8.7	2.7	8.0	9.3	4.6	31.1	5.1	7.7	0.1	0.2	7.1	9.3	9	10.2	4.8	7.1	9.4	9.7	8.45	3.93
SODIUM	122	42	75.0	77.4	42.7	168	65.6	68.4	97.2	86.1	88.2	185	84.8	129	66.0	73.0	91.7	129	104.99	35.53
THALLIUM	0.44	0.53	0.51	0.56	0.47	0.51	0.48	0.45	0.44	0.48	0.46	0.48	0.48	0.47	0.46	0.49	0.49	0.5	0.48	0.04
VANADIUM	17.5	18.5	25.9	29.4	29.3	24.9	20.1	20.3	22.9	23	23.7	13.5	17.9	23.5	26.5	19.0	22.0	25.0	21.19	4.97
ZINC	79.0	34	65.4	57.5	61.4	52.4	37.9	79.5	43.9	45.0	49.3	28	42.5	42	51.2	46.1	51.3	57	46.49	13.11
CYANIDE	0.6	0.17	0.24	0.14	0.12	0.14	0.11	0.11	0.12	0.11	0.11	0.71	0.12	0.12	0.28	0.19	0.5	0.12	0.17	0.13

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## WASTE PIT RUNOFF CONTROL REMOVAL ACTION

SAMPLING RESULTS (ug/tq)/Q

Page 1 of 2

PESTICIDES/PCBs	EPA SAMPLE NO.																								
	61002	61009	61016	61023	61030	61037	61044	61050	61058	61065	61072	61079	61086	61093	61100	61107	61114	61121	61128	61135	61142	61150	61158	61163	61170
ALPHA-BHC	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
BETA-BHC	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
DELTA-BHC	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
GAMMA-BHC	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
HEPTACHLOR	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
ALDRIN	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
HEPTACHLOR EPOXIDE	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
ENDOSULFAN I	10	8.8	9.2	10	10	9.2	9.5	9	9.9	9.2	9.4	9.2	9.3	9.2	10	10	9	27	9	10	9.4	9.7	10	9.8	10
DIELDRIN	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	18	20	19	20	20	
4,4'-DDE	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	18	20	19	20	20	
ENDRIN	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	20	19	19	20	20	
ENDOSULFAN II	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	20	19	19	20	20	
4,4'-DDD	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	20	19	19	20	20	
ENDOSULFAN SULFATE	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	20	19	19	20	20	
4,4'-DDT	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	20	19	19	20	20	
METHOXYCHLOR	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
ENDRIN KETONE	20	18	18	20	20	18	19	18	20	18	19	18	19	18	20	20	18	20	18	20	19	19	20	20	
ALPHA-CHLORDANE	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
GAMMA-CHLORDANE	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
TOXAPHENE	200	180	180	200	200	180	190	180	200	180	190	180	190	180	200	200	180	240	180	200	190	200	200	200	
AROCLOL 1016	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
AROCLOL 1221	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
AROCLOL 1232	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
AROCLOL 1242	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
AROCLOL 1248	100	88	92	100	100	92	95	90	99	92	94	92	93	92	100	100	90	270	90	100	94	97	100	98	100
AROCLOL 1254	200	180	180	13	200	180	64	180	14	180	190	180	190	180	200	200	180	540	180	200	190	200	200	200	
AROCLOL 1260	200	180	180	200	37	180	190	180	200	180	190	180	190	180	200	200	180	540	180	200	190	200	200	200	

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Enclosure 2

January 21, 1992

RESPONSE TO COMMENTS

from

OHIO ENVIRONMENTAL PROTECTION AGENCY

WASTE PIT AREA STORMWATER RUNOFF CONTROL REMOVAL ACTION

GENERAL COMMENT:

It should be noted at the July Groundwater meeting in Cincinnati, Ohio between Ohio EPA, USEPA and DOE, DOE agreed to containerize all soils excavated in areas where soil samples detected above background levels of HSL constituents. DOE agreed to maintain this until such time as a written change procedure was submitted and approved by the EPAs.

RESPONSE

Excess soils created by this removal action shall be managed as suggested in OEPA's Specific Comment 1 to the revised Sampling and Analysis Plan below.

RESOLUTION

See Attachment A to Attachment 3, Sampling and Analysis Plan, "Excess Soil Sampling and Disposition," Page 2 of 5.

SPECIFIC COMMENTS ON REVISED SAP

SPECIFIC COMMENT 1:

Page three, First bullet: Since the risk based remediation goals are likely to be below 100 pCi/g for total uranium and 50 pCi/g for total thorium and the OU1 Treatability Study Work Plan includes a statement of a remedial action objective of 5 and 15 pCi/g for thorium, soil stockpiles contaminated with uranium below 100 and thorium below 50 pCi/g should not be released for unrestricted use within the FEMP. It makes no sense for DOE to further spread soil which they know will have to be remediated at a later date. The stockpiles should be maintained in a manner to prevent erosion and incorporated into the Improved Storage of Soil and Debris Removal Action #17.

RESPONSE

The first "bullet" on page 3 of 5 of the Sampling and Analysis plan shall be modified to state that soil exhibiting concentrations of depleted uranium less than 35 pCi/g and natural thorium less than 10 pCi/g shall be returned to an uncontrolled state and made available for unrestricted use within the FEMP Controlled Area.

A fourth "bullet" shall be added which states that soils exhibiting concentrations of depleted uranium between 35 and 100 pCi/g or natural thorium between 10 and 50 pCi/g, but neither uranium nor thorium exceeding 100 pCi/g and 50 pCi/g, respectively, shall be incorporated into the Improved Storage of Soil and Debris Removal Action #17.

RESOLUTION

See Attachment A to Attachment 3, Sampling and Analysis Plan, Page 3 of 5.

SPECIFIC COMMENT 2:

Page three, bullets: DOE has failed to state how it will address soils which are contaminated with above background levels of HSL constituents but pass TCLP. These soils may be considered a solid waste under Ohio Solid Waste regulations.

RESPONSE

The background levels of HSL constituents in FEMP soils is not known at this time. The FEMP is currently performing a statistically based study to determine the background levels of HSL constituents in FEMP soils. Previous efforts to establish background levels for HSL constituents in FEMP soils have proven inaccurate.

Analytical data from the forty-four samples collected from the vicinity of this removal action indicate, with one exception, that contamination by HSL constituents is generally uniform across the project work area. The consistency of the HSL analytical data suggests that this data approximates HSL background levels.

The one exception to the general consistency of the HSL data is an isolated area of contamination by various pyrene compounds. Field inspection has revealed that the likely source of this contamination is asphalt rubble dumped in the area from which the contaminated sample was collected. This area of pyrene contamination lies outside the influence of excavations for this project and will not be disturbed by project construction activities.

Due to the general consistency of the data, and the only deviation from that consistency being a sample from an undisturbed area, no action in response to the subject HSL data is planned at this time. Data from the HSL analysis of the forty-four pre-excavation samples shall be included in the Administrative Record file for this removal action and included in the RI/FS database for use in future cleanup actions as part of Operable Unit 1 following final definition of cleanup levels through the RI/FS process.

DOE recognizes that excess soils created by this removal action may be solid wastes under RCRA. As indicated in the "Excess Soil Sampling and Disposition" section of the Sampling and Analysis Plan, TCLP analysis shall be performed on all stockpiled soils. This analysis shall be utilized to determine the status of the stockpiled soils as RCRA solid or hazardous wastes. No listed hazardous wastes are known to be present in the soil to be excavated as a part of this removal action. Please refer to Attachment A to Attachment 3, Sampling and Analysis Plan for a complete description of the revised soil management strategy for this removal action.

#### RESOLUTION

See Attachment A to Attachment 3, Sampling and Analysis Plan.

#### SPECIFIC COMMENT ON REVISED WP

Page ten, Second paragraph: DOE should provide further detail within the work plan on how a 10E-7 cm/sec permeability will be achieved.

#### RESPONSE

Agreed.

#### RESOLUTION

The construction details for two (2) drainage areas where runoff water is likely to be retained on a regular basis or runoff water flow is likely on a regular basis have been modified to reduce the permeability of the channel. Reduced permeability will be achieved in these areas by the use of channel flow line concrete paving and bentonite waterproofing techniques. Please find below descriptions of the specific permeability reducing details utilized in the two (2) affected drainage channels.

East Inlet Structure: Three (3) drainage channels upstream of the East Inlet Structure will be improved utilizing 6 inch concrete paving at the channel flow line. Three channels, one approaching from the east, one approaching from the south and one approaching from the north will receive 6 inch thick concrete paving at their flow lines placed over bentonite waterproofing mats. Bentonite waterproofing mats will also be applied to the below grade exterior surfaces of the East Inlet Structure.

North Inlet Structure: The drainage channel upstream and to the east of the North Inlet Structure will receive 6 inch thick concrete paving at its flow line placed over bentonite waterproofing mats. Bentonite waterproofing mats will also be applied to the below grade exterior surfaces of the North Inlet Structure.

See Attachment 3, Section 5, Page 10.